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VACCINATION FOR FOOT-AND-MOUTH DISEASE IN EUROPE

Livestock owners often ask these two questions: (1) "Why slaughter animals with foot-and-mouth disease?" and (2) "You could produce vaccines; why not use them?"

The answers to these questions are simple: (1) Slaughter is the only effective means of eradicating the disease; and (2) the disease has never been eradicated by vaccines.

The use of vaccines assumes a continued presence of the disease. As a matter of simple economics, it is far less expensive to eradicate the disease through an effective slaughter program than to attempt to live with it as the use of vaccines would imply.

Strong support for this position comes from western Europe, where, for the most part, countries depend upon vaccination, quarantines, and other sanitary measures to keep foot-and-mouth disease under control, instead of adopting programs to eradicate the disease, as has been done in the United States.

In 1952 western European countries, with a livestock population about equal to that of the United States, suffered losses from foot-and-mouth disease in livestock and livestock products of almost \$900,000,000. These estimates were published by James Reid, member of the Royal College of Veterinary Surgeons, in the English Journal of the Ministry of Agriculture. Dr. Reid said in part:

"Following a fairly normal year when 615 outbreaks were recorded in the three western zones of Germany, disease flared up about midsummer of 1951 and gave rise to the alarming total of 154,478 outbreaks in the 12 months ended December 31, 1951.

"International frontiers, like county boundaries, form no barrier to the spread of such a highly infectious virus disease, and by the time Germany's figures reached their peak in November, outbreaks in bordering countries had already shown an appreciable rise."

Dr. Reid reports that the peak of the epizootic had passed in most European countries by January 1952, except for France. In that country the number of outbreaks increased up to July, when 111,637 outbreaks were recorded.

Dr. G. Ramon, Director of the International Office of Epizootics, in a report, published in December 1952, has this to say:

"We must admit and think over the fact, which cannot be denied, that vaccination is incapable of controlling the epidemic and stopping the epizootic of foot-and-mouth disease in France and in other countries."

In France, where about 6 million animals were vaccinated from September 1, 1951, to September 30, 1952, there were 314,605 outbreaks involving 5,221,377 cloven-footed animals. Slaughter was not used and sanitary regulations were "not regularly applied."

In Great Britain, on the other hand, where no vaccination was used, where all infected and exposed animals were slaughtered, and where sanitary regulations were strictly applied, there were 578 outbreaks involving 85,000 animals.

Dr. Ramon then examines the cost of the two methods:

"In Great Britain, the amount paid in compensation to stock-owners for the slaughter of their herds since the epizootic started up to now is totaling about 3 million pounds sterling [US \$8.4 million].

"The total amount of various losses (deaths, abortions, fall in milk and meat production, etc.) due to the foot-and-mouth disease epizootic since a year ago in France go no doubt beyond 100,000 million francs [US \$285.7 million].

"The cost of vaccines and vaccination carried out in France for the period from September 1, 1951, to October 1, 1952, amounts to 3,000 million francs [US \$8.6 million] at least, which is nearly equal to the compensation paid in England to the stock-owners."

Therefore, France had incurred losses of some \$294 million and still had the disease. Great Britain had spent \$8.4 million and got rid of the disease.

Dr. Ramon summarizes:

"... Foot-and-mouth disease has a great spreading power and there is the simultaneous or successive occurrence of different types or variants of the foot-and-mouth disease ultravirus.

"The variants seem to originate either from the reaction of the virus type primarily concerned towards influences (for example defense of the organisms infected with the disease) which tend to diminish and neutralize its infectivity or from successive passages on animals (of the same species or different species) in the course of the epizootic. These variants which can be compared to the forms of resistance adopted by bacteria towards antibiotics, secure the long life and aggressivity of the ultravirus; consequently they give rise to the occurrence, increasing severity, and persistence of the epizootic. On account of these variants and for such reasons as the low value and short duration of the immunity given by vaccines, the vaccination against foot-and-mouth disease as has been generally applied up to now, is incapable of eradicating the enzootic infection and failed to control and stop the epizootic--although it has provided temporary protection for some isolated herds....

"On the other hand, the following system has once more given the best evidence of its efficacy in the present epizootic. It consists in applying the following measures: Strict observance of sanitary regulations; slaughter of infected and contact animals; disinfection; etc. Thanks to that system, a number of countries have been able to protect themselves from any invasion by foot-and-mouth disease, while others have succeeded in getting rid of the disease at a relatively low cost.

"Consequently in the light of our present knowledge and until improvements can be achieved concerning active immunization, we must give preference to that system. All the various countries belonging to the same or to different continents must enforce it with vigilance and speed in a planned and simultaneous action against the danger with which they are threatened, wherever it may occur. In doing so, they will avoid any return in the future of the foot-and-mouth disease scourge which decimates livestock and disorganizes the world agricultural economy by heavy losses, thus endangering the welfare of the whole human collectivity."

Eradication of foot-and-mouth disease by the slaughter method is further supported by the recently published report of a special British committee. The British Minister of Agriculture and Fisheries appointed the committee of scientists representing various fields to "review the policy and arrangements for dealing with foot-and-mouth disease in Great Britain, and to advise whether any changes should be made in the light of present scientific knowledge and the technical and administrative experience gained in recent years in this and other countries." This committee made an intensive study during the period 1952-54 in England, Europe, and South America. The problem was discussed with animal disease authorities of the United States and many other countries. Included in the report are the following statements:

"The disease would rapidly establish itself as endemic in any country that failed to take energetic and rigorous measures to prevent it. If it were to do so in this country the result would be a national calamity. . . In the circumstances of today, and of the immediate future so far as they are foreseeable, any idea that it would be possible to do away with stamping-out (the slaughter method of eradication) by making the whole susceptible animal population--or even all cattle--immune by vaccination is in the realm of fantasy. In present circumstances stamping-out must continue to be the policy in Great Britain."

